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### (54) NOISE STOP ELEMENT

#### (57) Abstract:

**PURPOSE:** To attain miniaturization while improving high-frequency characteristics by mounting a thin-film inductance element formed so as to be wrapped with soft magnetic multilayer films, in which amorphous ferromagnetic layers and crystalline nonmagnetic layers are superposed alternately, into a vessel having the same terminal array as a package for an integrated circuit.

**CONSTITUTION:** With soft magnetic multilayer films 21 and 22, amorphous magnetic films 23, main film compositions of which are composed of  $(\text{CoZrNb})_{51}\text{F}_4$  and which mainly comprise a halogen element and a ferromagnetic element, and crystalline nonmagnetic films 24, film compositions of which consist of  $(\text{CoZrNb})_{40}\text{F}_{60}$ , are superposed alternately, and they are formed in multilayer films having excellent high-frequency characteristics as a whole. Electric conductive films 25 are shaped from a coil-shaped Cu film, and the intermediate section of two windings and the outside of the whole are wrapped with an electric insulating film 26 composed of  $\text{SiO}_2$ . When the insulated and covered coil is wrapped with the soft mag-

netic multilayer films 21 and 22, a thin-film inductance element 13 in two layers and one line is formed accordingly, the inductance element 13 is set in a package having the same type as a package for an integrated circuit and constituted, thus manufacturing a small-sized noise stop element having excellent high-frequency characteristics and being proper to be in combination with the integrated circuit.

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